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Mobile Fishing Gear Effects on Benthic Habitats: A Bibliography

by
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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
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Introduction

In 1996, the U.S. Congress amended the Magnuson Fishery Conservation and Management Act of 1976 (renamed the Magnuson-Stevens Fishery Conservation and Management Act) with the Sustainable Fisheries Act (SFA), and set forth a number of new mandates including protection of essential fish habitat (EFH) and requirements to develop rebuilding plans for overfished stocks. The National Marine Fisheries Service (NMFS) subsequently defined EFH for a species as the combined area required to support a sustainable fishery and maintain the managed species' contribution to a healthy ecosystem. In response to the SFA, the NMFS and the eight regional fishery management councils were required to amend their fishery management plans to identify and describe EFH for all federally managed fishery stocks. Furthermore, activities with potential adverse effects on EFH, including fishing, must be investigated and conservation measures implemented to minimize or eliminate any impacts.

Viable marine habitats are needed to sustain healthy fish populations, and the disturbance, degradation or destruction of such habitats is a globally important issue. Scientific research has indicated that fishing, dredging and other anthropogenic activities may alter physical and biological characteristics of the benthos. Improved access to scientific research about fishing gear effects on fish habitat will facilitate a greater understanding of the issue, promote informed discussion amongst scientists, policymakers and interested stakeholders, and encourage more rapid progress toward management solutions. To this end, scientists at the Alaska Fisheries Science Center (AFSC) have assembled a bibliographic database of pertinent literature. It was initially developed in support of field research programs investigating effects of bottom trawls on eastern Bering Sea, Gulf of Alaska and Aleutian Islands benthos. Ultimately, this literature should aid the NMFS and the eight regional fishery management councils in assessing effects of fishing on EFH.

The original bibliography has been updated and is now a comprehensive listing of scientific and popular literature on demersal, mobile fishing gear and its effects in marine ecosystems. In addition to peer reviewed literature, the bibliography includes state and Federal reports, contract and industry reports, theses and dissertations, conference and meeting proceedings and popular articles. The primary focus of this bibliography is bottom trawling, dredging, and raking, and the resulting direct disturbance of marine habitats and the associated biological communities. To a lesser extent, papers addressing other potential effects, such as bycatch and discards, are also referenced. This bibliography does not reference papers that specifically investigate fishing impacts due to longline fishing, trapping, ghost fishing, use of poisons/chemicals, dynamite blasting, or impacts due to boat hulls, anchors, or propeller wash.

The bibliography is worldwide in scope since the principles of gear disturbance are globally significant. Referenced papers reflect studies conducted in diverse habitats ranging from nearshore tidal flats to the deeper regions of the continental shelf. Papers written in languages other than English are also cited in the bibliography, and English translations of the material are provided. When available, author abstracts are included with each reference. If no abstract was available for use, a brief summary was produced and added. If papers were not available to produce a summary, only a citation is given.

This bibliography can be found on the AFSC web site (www.afsc.noaa.gov) as an Adobe PDF document under Online Publications and as a searchable, dynamic database at <http://www.afsc.noaa.gov/groundfish/HAPC/references.html>.

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